

aHornet Aspire R3600

Service Guide

Service guide files and updates are available on the AIPG/CSD web; for more information please refer to <http://csd.acer.com.tw>

PRINTED IN TAIWAN

Revision History

Please refer to the table below for the updates made on aHornet Aspire R3600 Service Guide.

Date	Chapter	Updates

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Conventions

The following conventions are used in this manual:

SCREEN MESSAGES	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Remind you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.
2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

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System Specifications

Features

Operating System

- ☐ Microsoft Windows Vista Home Premium SP2
- ☐ Microsoft windows Vista Home Basic SP2
- ☐ Ubuntu Linux

Processor

- ☐ Socket Type: None
- ☐ Processor Type:
 - ☐ Intel Atom 230
 - ☐ TDP below 8W(include 8W)

Chipset

- ☐ Nvidia MCP7A-ION

PCB

- ☐ 170mm*170mm (Proprietary)

Memory

- ☐ Memory Type: DDRII SO-DIMM 667/800
- ☐ Support single channel 64 bit mode with maximum memory size up to 4GB
- ☐ Support SO- DIMM (MCP7A-ION)
- ☐ DIMM Slot: 2
- ☐ Memory Max: 512MB to 4GB DDRII memory technologies
- ☐ Capacity: Up to 2GB per DIMM with maximum memory size up to 4GB

PCI

- ☐ Mini PCIe interface via mini card slot
 - ☐ Slot Quantity: 1

SATA

- ☐ Slot Type: SATA slot (Default AHCI mode)

-
- Slot Quantity: 1
 - One eSATA support on front

Audio

- Audio Type: HD audio codec
- Audio Channel: 7.1 channel
- Audio Controller /Codec: ALC662
- Connectors support:
 - Audio jacks color coding: should meet Microsoft Windows Logo Program Device Requirements: Audio-0002
 - Front 2 jack follow HD audio definition
 - S/N ratio: 90 dB at rear output jack

LAN

- MAC Controller: MCP7A-ION
- Should be worked under 10M/100M/1000Mbps environment
- PHY: Intel 8211CL

USB

- Controller Type: MCP7A-ION
- Ports Quantity: 8
 - 4 back panel ports
 - 2 ports for front daughter board
 - Connector Pin: standard Intel FPIO pin definition
- Data transfer rate support:
 - USB 2.0/1.1

BIOS

- BIOS Type: AMI Kernel with Acer skin
- Size: 8Mb
- Note:
 - Boot ROM should be included (PXE function should be built in with default

and RPL function is optional by service BIOS)

Rear I/O Connector

- 1 HDMI port
- 1 D-sub port
- 4 USB ports
- 1 DC-in Jack
- 1 RJ45 port
- 1 Kensington lock

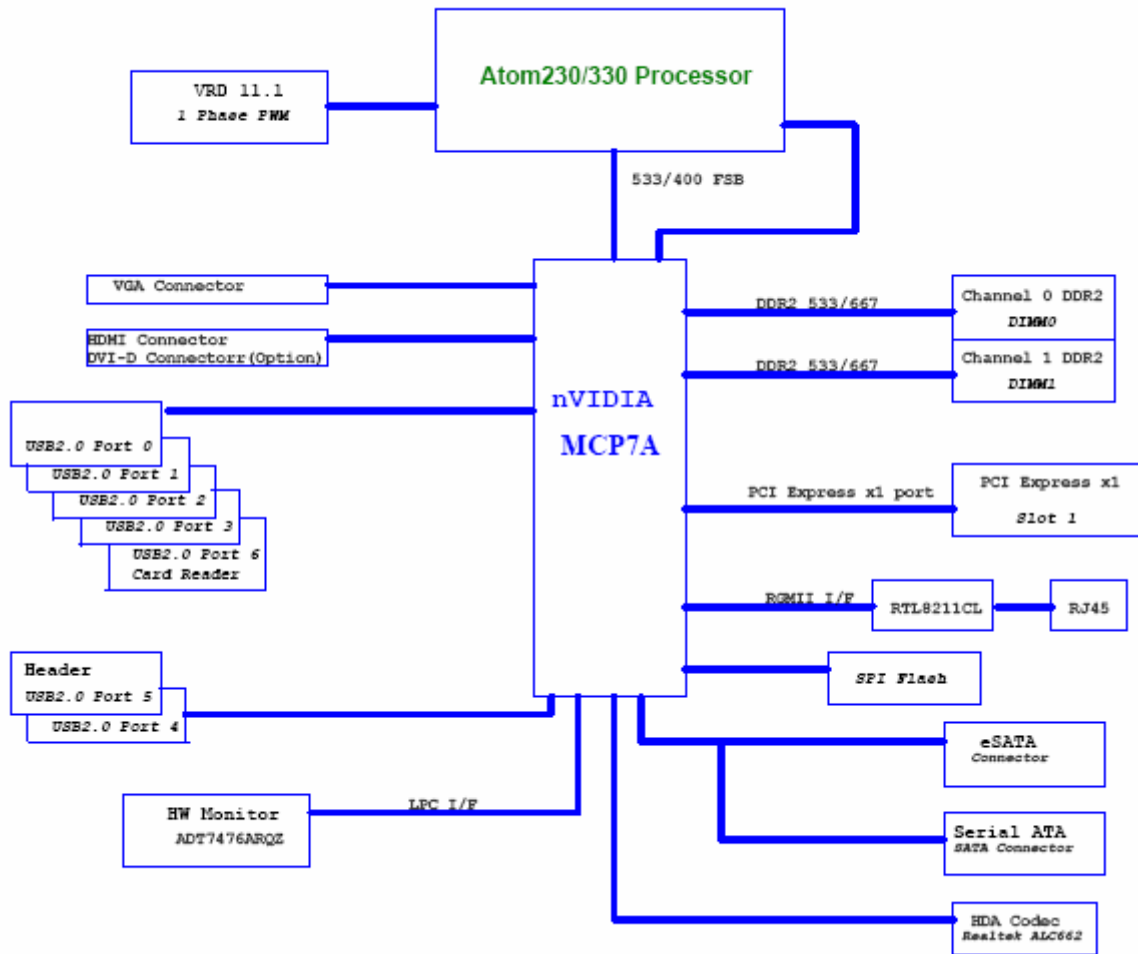
On-board connectors

- 2 DDRII SO-DIMM memory sockets
- 1 Mini PCIe slot
- 1 SATA connectors
- Board to board design for Power Switch, Power Indicator and 2*USB 2.0
- audio connector one line-out and one MIC
- 1 5V power ports for HDD
- 1 4 pin CPU Fan connector
- 1 3 pin clear CMOS header
- 1 on board buzzer
- Color management for on board connector

Power Supply

- Adapter Mounting Features
 - Universal AC adapter, 90~264V AC, 47~63HZ
 - 3-pin 65W with 19VDC output
 - Small DC jack

Block Diagram



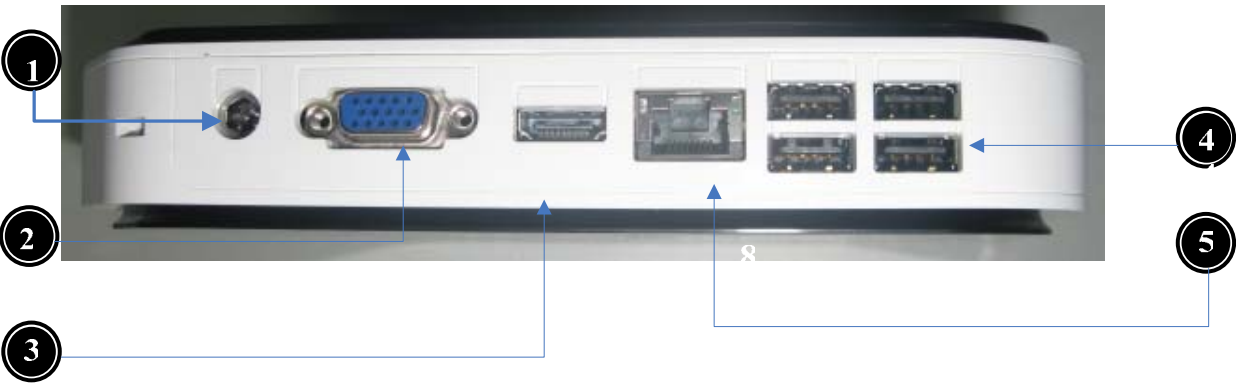
Aspire R3600 side cover

The computer's side cover consists of the following:



Label	Description
1	Power Button
2	Acer Logo

Aspire R3600 Rear Panel



Label	Description		
1	DC-in Jack		
2	D-sub connector		
3	HDMI connector		
4	USB 2.0 connector		
5	LAN connector		

Hardware Specifications and Configurations

Processor

Item	Specification
Type	Intel Atom 230
Socket	None
FSB	400/533
Minimum operating speed	0 MHz (If Stop CPU Clock in Sleep State in BIOS Setup is set to Enabled.)

BIOS

Item	Specification
BIOS code programmer	AMI Kernel with Acer skin
BIOS version	P01-A0
BIOS ROM type	SPI Flash
BIOS ROM size	8Mb
Support protocol	SMBIOS(DMI)2.4/DMI2.0
Device Boot Support	- 1st priority: HDD/SDD - 2nd priority: CD-ROM - 3rd priority: Removable Device - 4th priority: LAN
Support to LS-120 drive	YES
Support to BIOS boot block feature	YES

BIOS Hotkey List

Hotkey	Function	Description
Del	Enter BIOS Setup Utility	Press while the system is booting to enter BIOS Setup Utility.

Main Board Major Chips

Item	Specification
North Bridge	MCP7A-ION
South Bridge	MCP7A-ION
APG controller	MCP7A-ION
Audio controller	Realtek HD audio codec ALC662-HD codec 7.1 (co-lay with ALC662)
LAN controller	RTL 8211CL Gigabit Ethernet Phy
HDD controller	MCP7A-ION

Memory Combinations

Slot	Memory	Total Memory
Slot 1	512MB, 1GB,2GB	512MB ~2GB
Slot 2	512MB, 1GB,2GB	512MB ~2GB
Maximum System Memory Supported		512MB ~4GB

System Memory

Item	Specification
Memory slot number	2 slot
Support Memory size per socket	512MB /1GB/2GB
Support memory type	DDR2
Support memory interface	DDR2 667/800MHz
Support memory voltage	1.8V
Support to parity check feature	Yes
Support to error correction code (ECC) feature	No
Memory module combinations	You can install memory modules in any combination as long as they match the above specifications.

Audio Interface

Item	Specification
Audio controller	NV MCP7A-ION
Audio controller type	ALC662-HD
Audio channel	codec 7.1
Audio function control	Enable/disable by BIOS Setup
Mono or stereo	Stereo
Compatibility	Sound Blaster Pro/16 compatible Mixed digital and analog high performance chip Enhanced stereo full duplex operation High performance audio accelerator and AC'97 support Full native DOS games compatibility Virtual FM enhances audio experience through real-time FM-to-Wavetable conversionMPU-401 (UART mode) interface for Wavetable synthesizers and MIDI devices Integrated dual game port Meets AC'97and WHQL specifications
Music synthesizer	Yes, internal FM synthesizer
Sampling rate	48 KHz (max.)
MPU-401 UART support	Yes
Microphone jack	Supported
Headphone jack	Supported

SATA Interface

Item	Specification
SATA controller	NV MCP7A-ION
SATA controller resident bus	PCI bus
Number of SATA channel	SATA X 1
Support bootable CD-ROM	YES

USB Port

Item	Specification
Universal HCI	USB 2.0/1.1
USB Class	Support legacy keyboard for legacy mode
USB Connectors Quantity	4 back panel ports 2 ports for front daughter board

Environmental Requirements

Item	Specification
Temperature	
Operating	+5°C ~ +35°C
Non-operating	-20 ~ +60°C (Storage package)
Humidity	
Operating	15% to 80% RH
Non-operating	10% to 90% RH
Vibration	
Operating (unpacked)	5 ~ 500 Hz: 2.20g RMS random, 10 minutes per axis in all 3 axes 5 ~500 Hz: 1.09g RMS random, 1 hour per axis in all 3 axes

Power Management

Devices	S1	S3	S4	S5
Power Button	V	V	V	V
USB Keyboard/Mouse	V	V	N/A	N/A
PME	Disabled	Disabled	Disabled	Disabled
RCT	Disabled	Disabled	Disabled	Disabled
WOR	Disabled	Disabled	Disabled	Disabled

- *Devices wake up from S3 should be less than*
- *Devices wake up from S5 should be less than 10 seconds*

Power Management Function (ACPI support function)

Device Standby Mode

- ☐ Independent power management timer for hard disk drive devices (0-15 minutes, time step=1 minute).
- ☐ Hard disk drive goes into Standby mode (for ATA standard interface).
- ☐ Disable V-sync to control the VESA DPMS monitor.
- ☐ Resume method: device activated (Keyboard for DOS, keyboard & mouse for Windows).
- ☐ Resume recovery time: 3-5 sec.

Global Standby Mode

- ☐ Global power management timer (2-120 minutes, time step=10 minute).
- ☐ Hard disk drive goes into Standby mode (for ATA standard interface).
- ☐ Disable H-sync and V-sync signals to control the VESA DPMS monitor.
- ☐ Resume method: Return to original state by pushing external switch button, modem ring in, keyboard and mouse for APM mode.
- ☐ Resume recovery time: 7-10 sec.

Suspend Mode

- ☐ Independent power management timer (2-120 minutes, time step=10 minutes) or pushing external switch button.
- ☐ CPU goes into SMM.
- ☐ CPU asserts STPCLK# and goes into the Stop Grant State.
- ☐ LED on the panel turns amber colour.
- ☐ Hard disk drive goes into SLEEP mode (for ATA standard interface).
- ☐ Disable H-sync and V-sync signals to control the VESA DPMS monitor.
- ☐ Ultra I/O and VGA chip go into power saving mode.
- ☐ Resume method: Return to original state by pushing external switch button, modem ring in, keyboard and mouse for APM mode.
- ☐ Return to original state by pushing external switch button, modem ring in and USB keyboard for ACPI mode.

ACPI

- ☐ ACPI specification 1.0b.
- ☐ S0, S1, S3 and S5 sleep state support.
- ☐ On board device power management support.
- ☐ On board device configuration support.

System Utilities

The manufacturer or the dealer already configures most systems. There is no need to run Setup when starting the computer unless you get a Run Setup message.

The Setup program loads configuration values into the battery-backed nonvolatile memory called CMOS RAM.

This memory area is not part of the system RAM.

NOTE: If you repeatedly receive Run Setup messages, the battery may be bad/flat. In this case, the system cannot retain configuration values in CMOS.

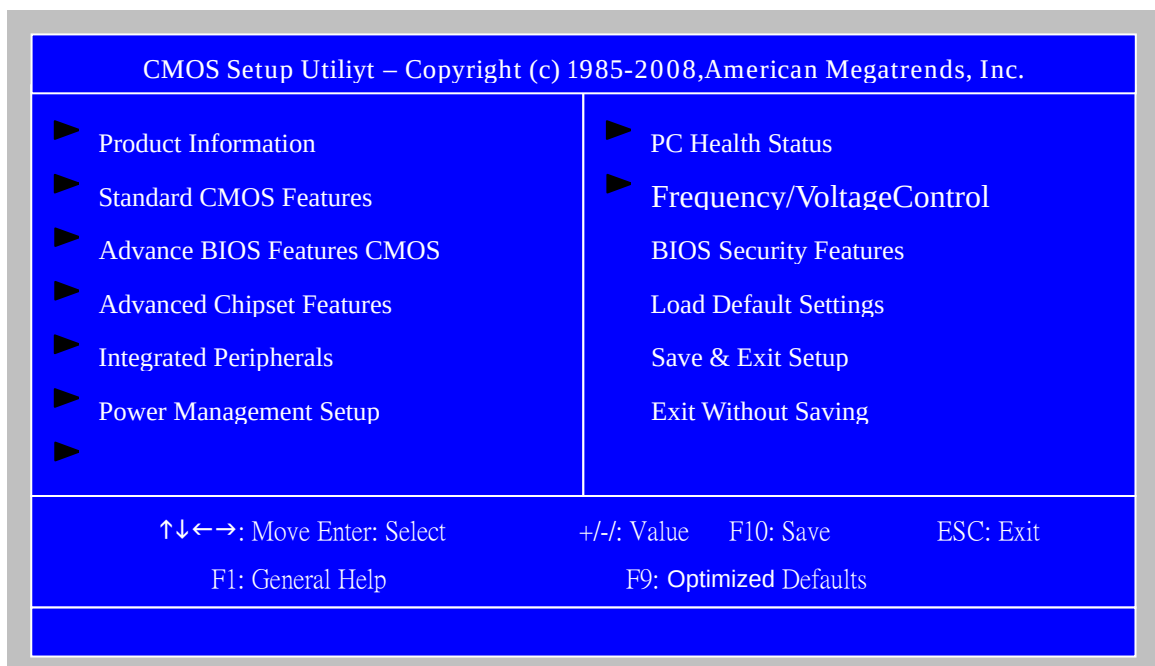
Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message of “Press DEL to enter SETUP” appears on the screen, press the key of [Delete] to enter the setup menu.

NOTE: If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On. You may also restart the system by simultaneously pressing [Ctrl+ Alt+ Delete].

The Setup Utility main menu then appears:

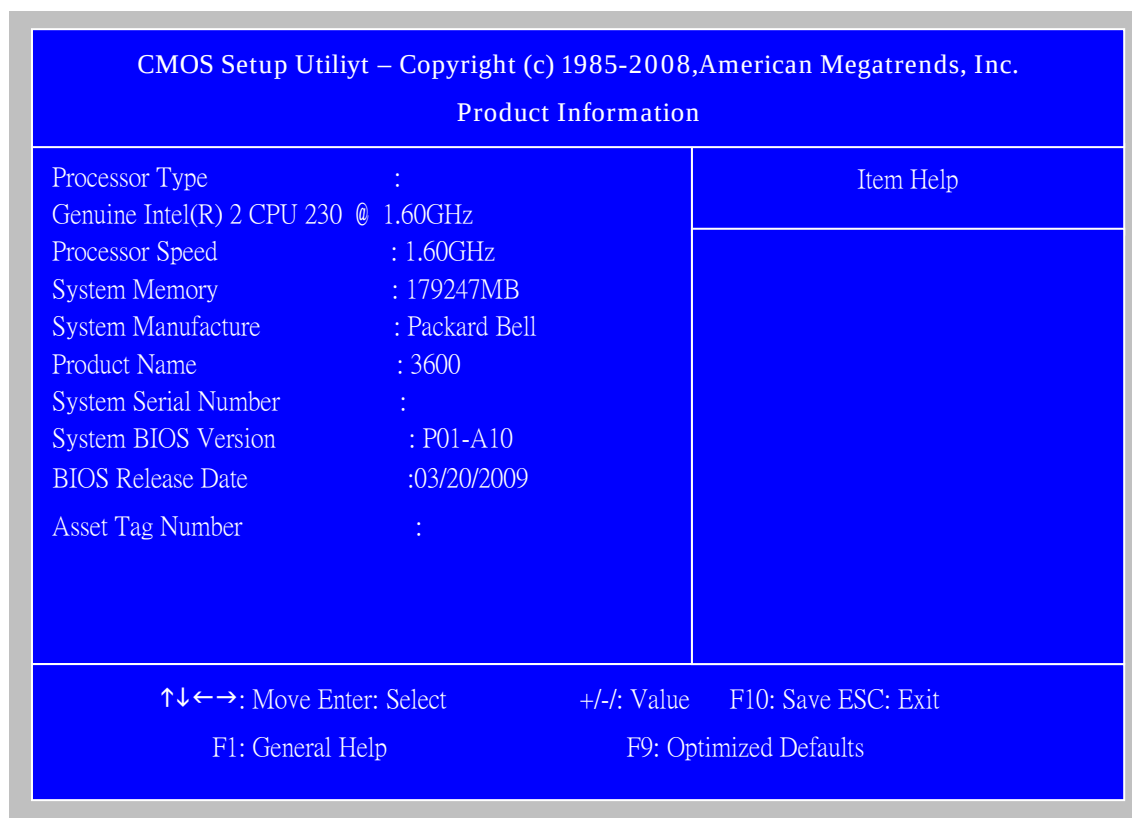


The items in the main menu are explained below:

Parameter	Description
Production Information	This page shows the relevant information of the main board
Standard CMOS Features	This setup page includes all the items in standard compatible BIOS
Advance BIOS Features	This setup page includes all the items of Award special enhanced features
Advance Chipset Features	This setup page includes all advanced chipset features
Integrated Peripherals	This setup page includes all onboard peripherals
Power Management Setup	This setup page includes all the items of Green function features
PC Health Status	This setup page is the System auto detect Temperature, voltage, and fan speed
Frequency/Voltage Control	This setup page is the System Frequency/Voltage setup
BIOS Security Features	Change, set or disable password. It allows you to limit access to the System
Load Optimized Defaults	Load Optimized Settings Default Settings indicates the value of the system parameters which the system would be in best performance configuration
Save & Exit Setup	Save CMOS value settings to CMOS and exit setup
Exit Without Saving	Abandon all CMOS value changes and exit setup

Product Information

The screen below appears if you select Product Information from the main menu: The Product Information menu contains general data about the system, such as the product name, serial number, BIOS version, etc. This information is necessary for troubleshooting (maybe required when asking for technical support).



The following table describes the parameters found in this menu:

Parameter	Description
Processor Type	This item lists the product processor model
Processor Speed	This item lists the processor frequency for the system
System Memory	Total memory size for the system
Product Name	This item lists the product name
Product Name	This item lists the system BIOS version
System Serial Number	This item lists the system serial number
System BIOS Version	This item lists the system BIOS version
BIOS Release Date	This item lists the BIOS release date

Standard CMOS Setup

Select standard CMOS features from the main menu to configure some basic parameters in your system the following screen shows the standard CMOS features menu:

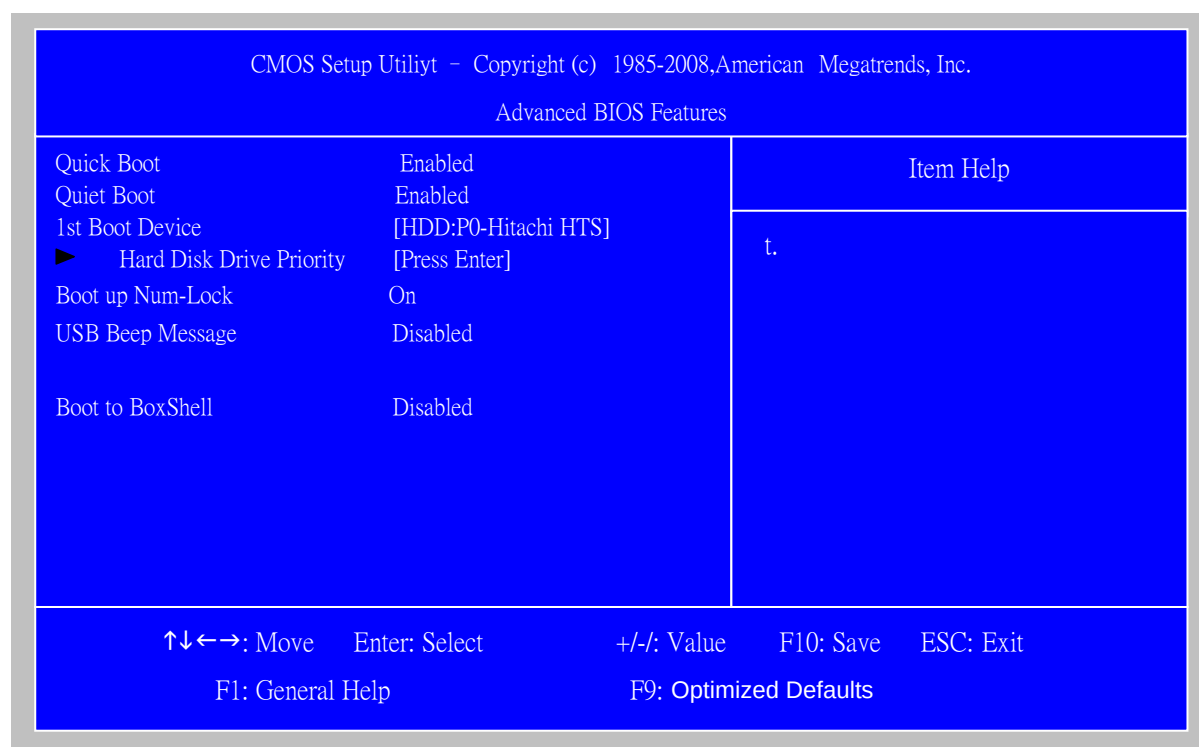
CMOS Setup Utility – Copyright (c) 1985-2005,American Megatrends, Inc.		
Standard CMOS Features		
System Date	[Wed 03/25/2009]	Item Help
Time	[11:54:33]	
▶ AHCI Port0	[Not Detected]	Use [ENTER], [TAB] or [SHIFT-TAB] to select A field . Use [+] or [-] to configure system Time.
▶ AHCI Port1	[Hard Disk]	
Halt on	[All, But Keyboard]	
↑↓←→: Move ENTER: Select Item +/-: Value F10: Save ESC: Exit		
F1: General Help F9: Optimized Defaults		

The following table describes the parameters found in this menu.

Parameter	Description	Options
System Date	To set the date following the weekday-month-date-year format	Week: From [Sun.] to [Sat.]. determined by BIOS and is display only Day: from [1] to [31] (or the maximum allowed in the month. Year: from 1999 to 2099
System Time	To set the time following the hour-minute-second format	The items format is [hour] [minute][second]. The time is calculated base on the 24-hour timer clock.
Halt On	This item enables use to select the situation if the BIOS stops the POST process and the notification	All Errors No Errors All, But Keyboard All, But Diskette All, But Disk/Key

Advanced Setup

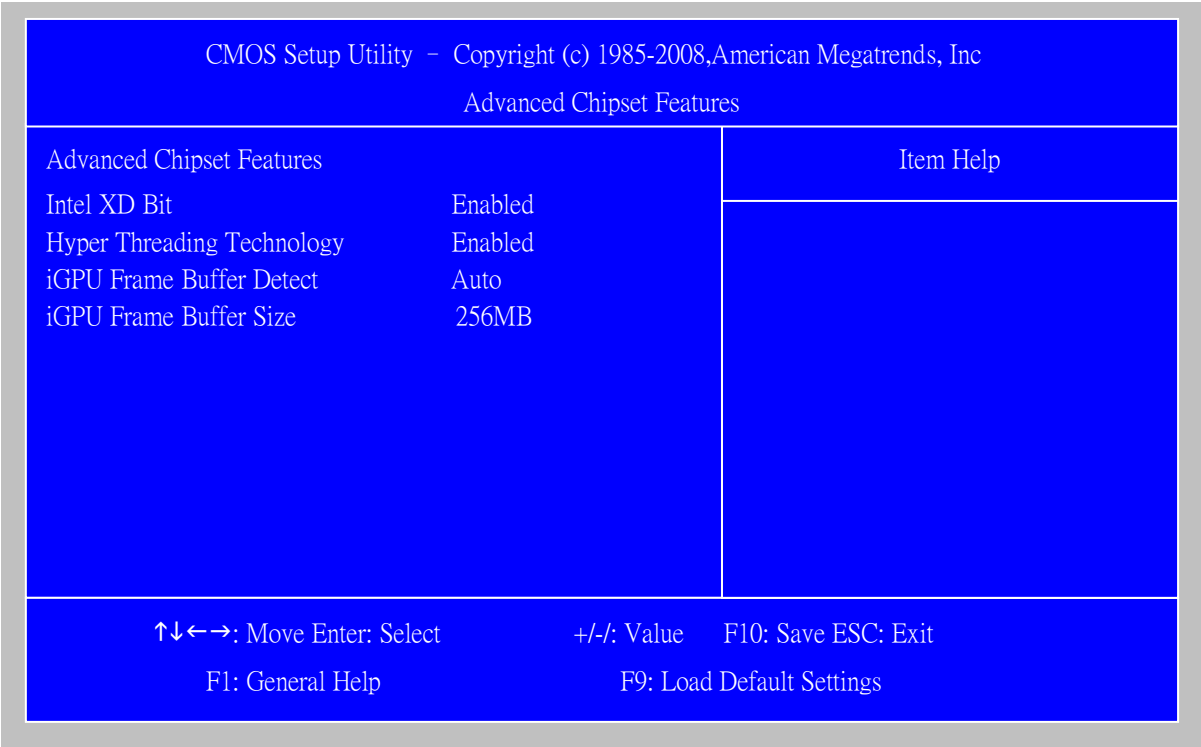
The following screen shows the Advanced Setup:



The following table describes the parameters found in this menu.

Parameter	Description	Options
Quick Boot	Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system	[Enabled], [Disabled]
1 st Boot Device	The item allows you to see the sequence of boot device where BIOS attempts to load the disk operation system.	
Hard Disk Drive Priority	Specifies the boot device. Priority sequence from available Hard Drives	
Boot up Num-Lock On	Select Power-on state for Numlock	On,Off
USB Beep Message	Enables the beep during USB device enumeration	[Enabled], [Disabled]

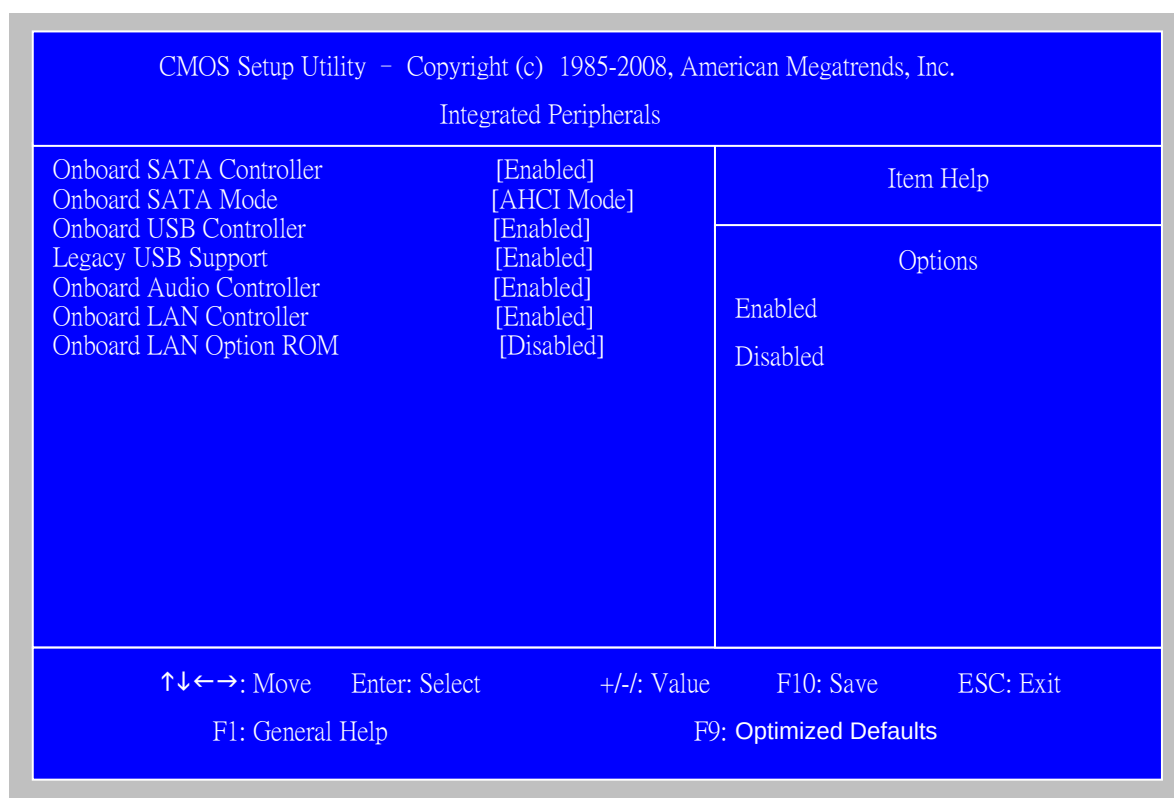
Advanced Chipset Setup



The following table describes the parameters found in this menu.

Parameter	Description	Options
Intel XD Bit	For Intel platform	Disabled/Enabled
Hyper Threading Technology	For Intel platform	Disabled/Enabled

Integrated Peripherals



The following table describes the parameters found in this menu.

Parameter	Description	Options
Onboard SATA Mode	This item is only available when onboard SATA controller is AHCI	AHCI Disabled / AHCI
Onboard SATA Controller	Always enabled SATA POST no matter what option is set	Disabled/Enabled
Onboard USB Controller	Always enabled USB keyboard during POST no matter what option is set	Disabled/Enabled
Onboard Audio Controller	Always enabled Audio POST no matter what option is set	Disabled/Enabled
Onboard LAN Controller	Always enabled LAN POST no matter what option is set	Disabled/Enabled
Onboard LAN Option ROM	This item is only available when onboard LAN controller is enabled	Disabled/Enabled

Power Management

The Power Management menu lets you configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use. The following screen shows the Power Management parameters and their default settings:

CMOS Setup Utility – Copyright (c) 1985-2008,American Megatrends, Inc		
Power Management Setup		
ACPI Aware O/S	[Yes]	Item Help
ACPI Suspend Mode	[S3 (STR)]	Yes/ No
Power On by RTC Alarm	[Disabled]	ACPI support for
Power On by PCIE Devices	[Disabled]	Operating System.
Power On By Onboard LAN	[Disabled]	Yes: If OS supports ACPI.
Wake Up by USB KB//Mouse	[Enabled]	No: If OS does not support ACPI.
Restore On AC Power Loss	[Last State]	

↑↓←→: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

The following table describes the parameters found in this menu.

Parameter	Description	Options
ACPI Aware O/S	Control wake up event for S1/S3/S4/S5	No/Yes
ACPI Suspend Mode		S1(POS)/S3 (STR)
Power On by RTC Alarm		Disabled/Enabled
Power On by PCIE Devices		Disabled/Enabled
Power On by Onboard Lan		Disabled/Enabled
Wake Up by USB KB//Mouse	Control wake up event for S1/S3	Disabled/Enabled

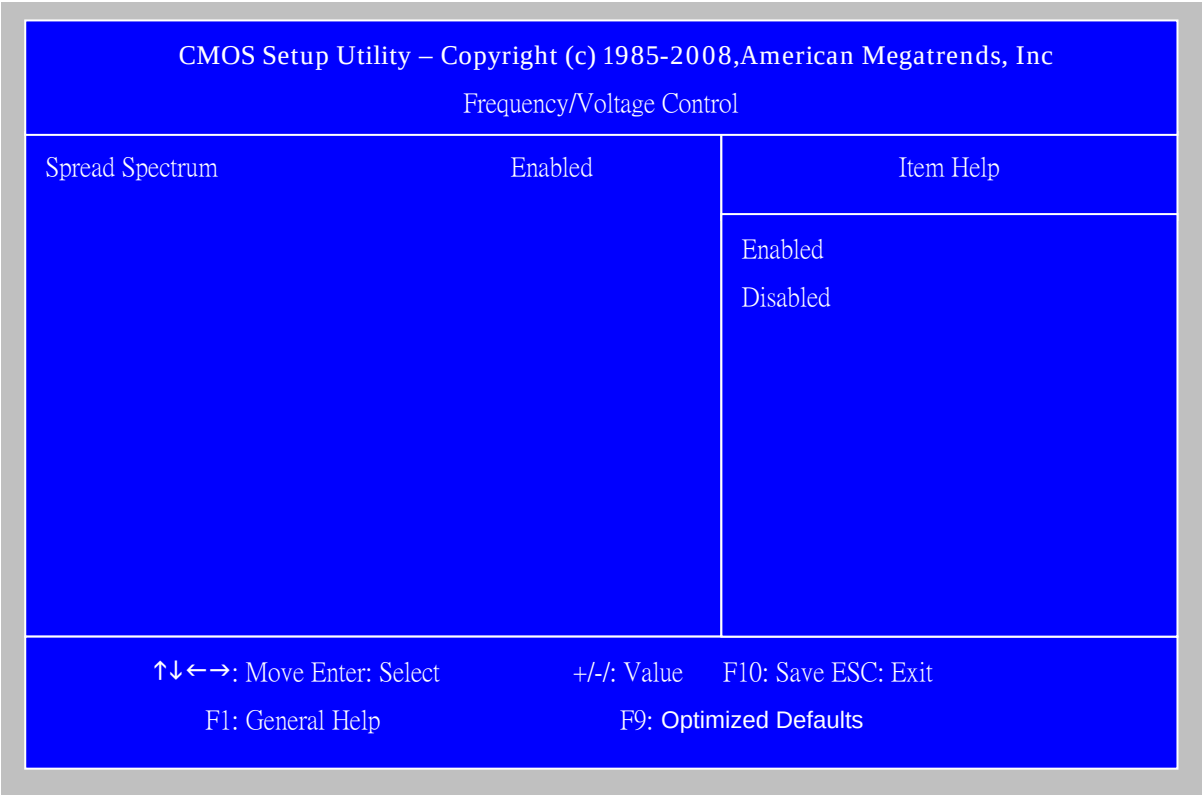
PC Health Status

CMOS Setup Utility – Copyright (c) 1985-2008,American Megatrends, Inc.		
PC Health Status		
CPU Temperature (PECI Mode)	: 29°C/84°F	Item Help
System Temperature	: 41°C/1105°F	
CPU Fan Speed	: 1515 RPM	
1.8V	1.8048V	
CPU Core	: 1.0962V	
+5.00V	: 5.1285V	
VBAT	: 3.230V	
MCP Core	1.0140v	
Smart Fan	[Enabled]	
↑↓←→: Move Enter: Select +/-: Value F10: Save ESC: Exit		
F1: General Help F9: Optimized Defaults		

The following table describes the parameters found in this menu:

Parameter	Description	Options
CPU/System Temperature	Detect CPU Temperature automatically	
CPU FAN Speed (RPM)	Detect CPU/SYSTEM Fan Speed Status automatically	
CPU Smart FAN Control	The item displays the system Smart Fan Function status. It is always enabled by system.	

Frequency/Voltage Control



The following table describes the parameters found in this menu:

Parameter	Description	Options
Spread Spectrum	Always auto detect Spread Spectrum	Disabled/Enabled

BIOS Security Features

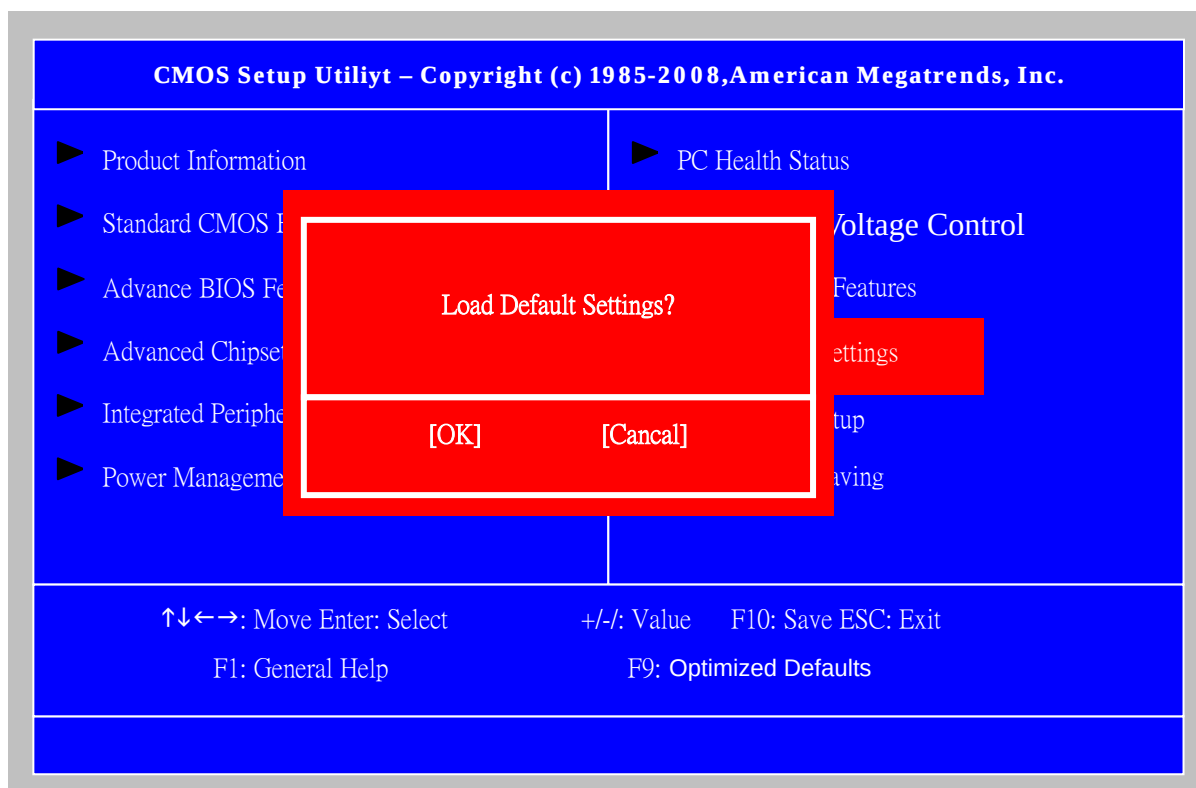
CMOS Setup Utility – Copyright (c) 1985-2008,American Megatrends, Inc.		
BIOS Security Features		
Supervisor Password	: Not installed	Item Help
User Password	: Not Installed	
Change Supervisor Password	[Press Enter]	Install or Change the Password
↑↓←→: Move Enter: Select +/-: Value F10: Save ESC: Exit F1: General Help F9: Optimized Defaults		

The following table describes the parameters found in this menu:

Parameter	Description	Options
Change Supervisor Password	This item is only available when supervisor password is installed, If clear supervisor password, user password should also be cleared. All setup items will be view-only except user password item when login with user password	Press Enter

Load Default Settings

This option opens a dialog box that lets you install defaults for all appropriate items in the Setup Utility.

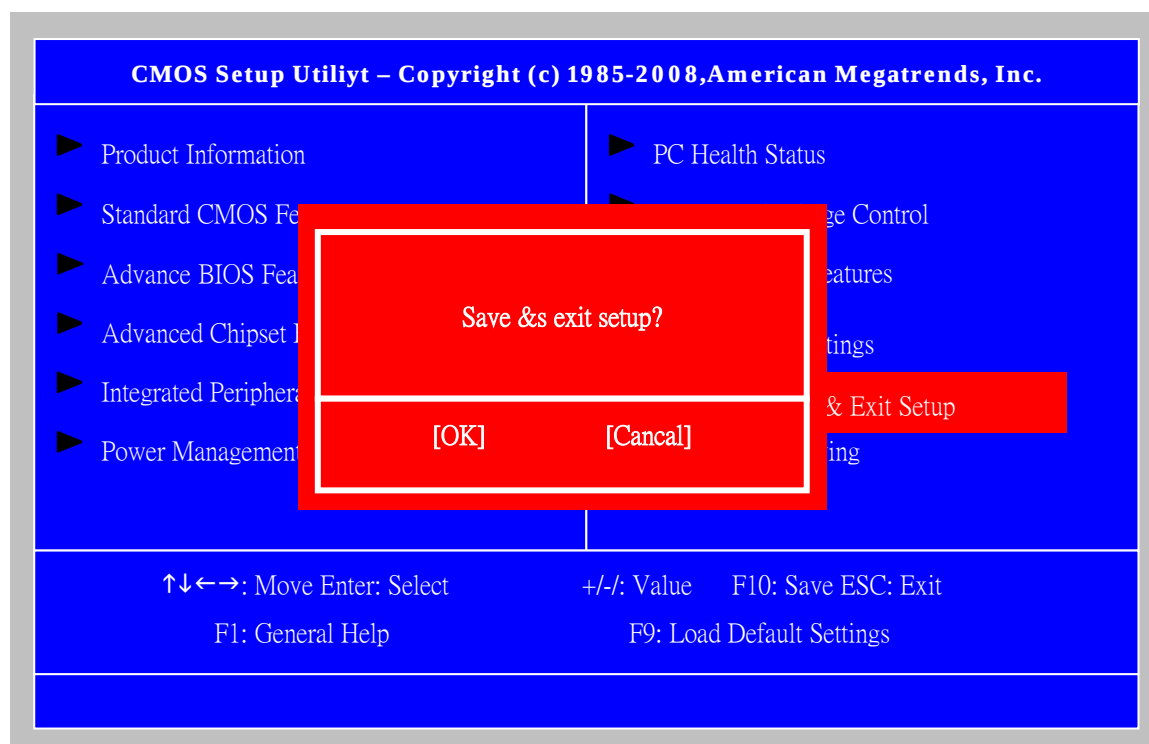


The following table describes the parameters found in this menu:

Parameter	Description	Options
Load Default Settings	Select the field loads the factory defaults for BIOS and Chipset Features, which the system automatically detects. This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility.	

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility.

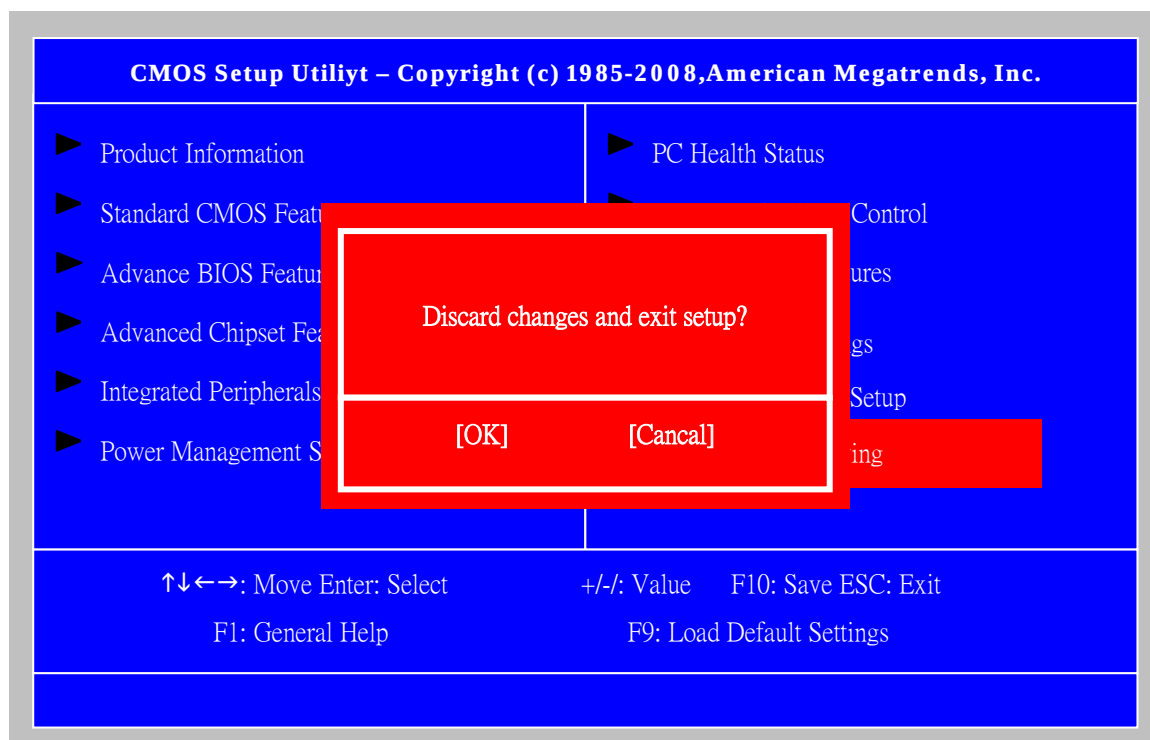


The following table describes the parameters found in this menu:

Parameter	Description	Options
Save configuration changes and exit setup	Press <Enter> to save the changes that have made in the Setup Utility and exit the Setup Utility. Press<Y> to save and Exit or <N> to return to the main menu.	

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility.



Parameter	Description	Options
Discard changes and exit setup	Press<Enter> to discard any changes and exit the Setup Utility	

Machine Disassembly and Replacement

To disassemble the computer, you need the following tools:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge.

- Wire cutter.

- Phillips screwdriver (may require different size).

NOTE: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatches when putting back the components.

General Information

Before You Begin

Before proceeding with the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug the AC adapter and all power and signal cables from the system

Disassembly Procedure

This section tells you how to disassemble the system when you need to perform system service. Please also refer to the disassembly video, if available.

CAUTION: Before you proceed, make sure you have turned off the system and all peripherals connected to it.

aHornet Aspire R3600 Standard Disassembly

Process Bezel

Process:

1. According to the requirement, paste ATI, OS, CPU, HDMI and marketing label by SKU.



Remove side cover

Process:

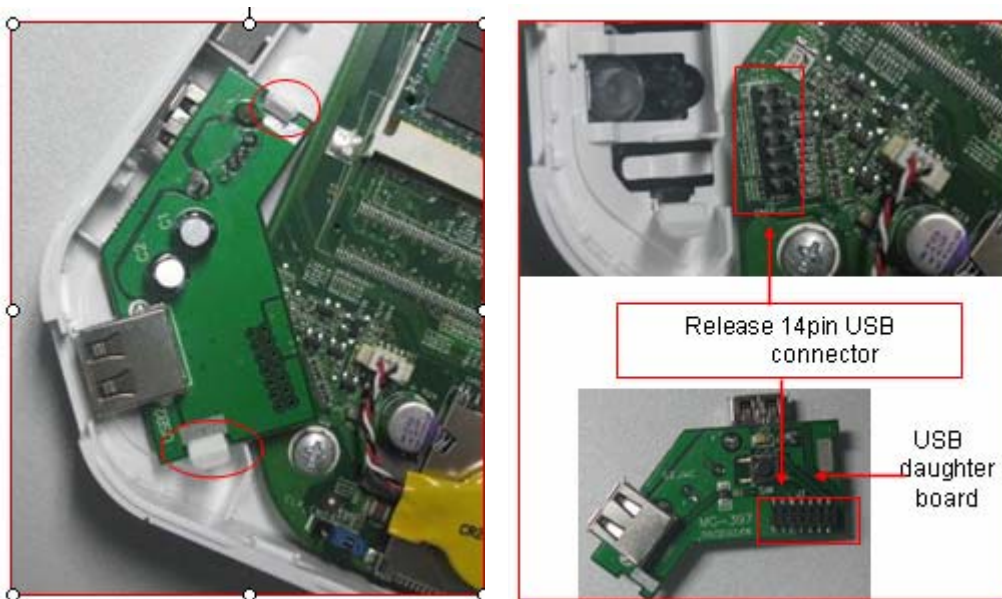
1. Put the Computer on the worktable lightly.
2. Release side cover with 1 screws then remove side cover.



Remove front D/B

Process:

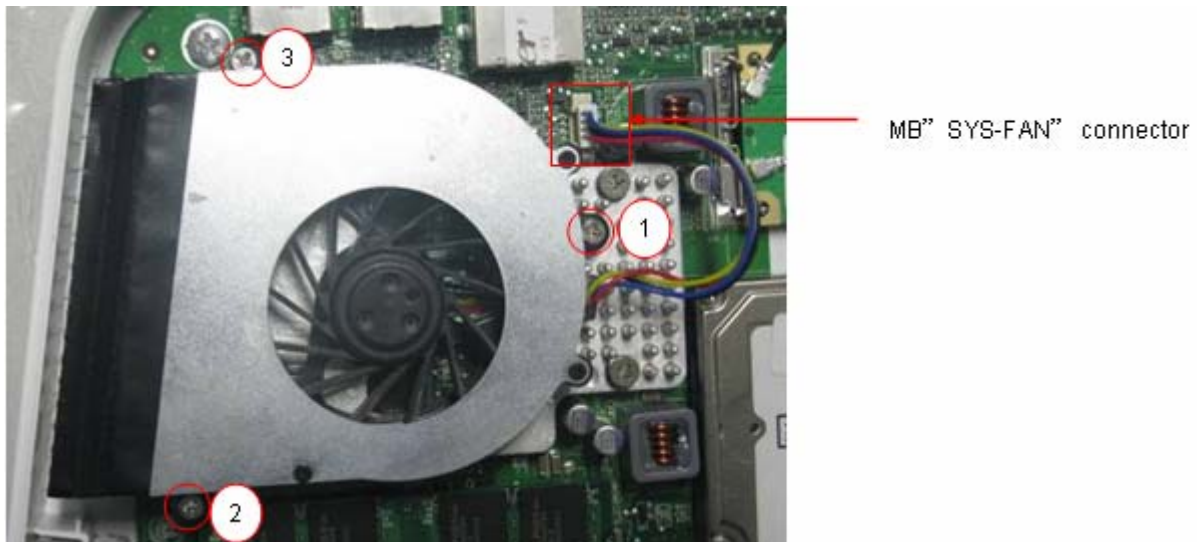
1. Release the front D/B



Remove CPU fan

Process:

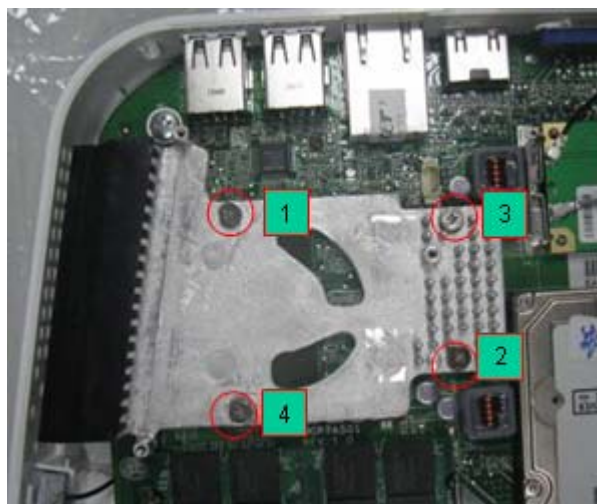
1. Release the three screws and fan cable.
2. Remove CPU fan.



Remove CPU Cooler

Process:

1. Release the four screws.
2. Remove CPU cooler.



Remove wireless LAN

Process:

1. Remove wireless LAN antenna cable
2. Remove wireless LAN.



Remove M/B

Process:

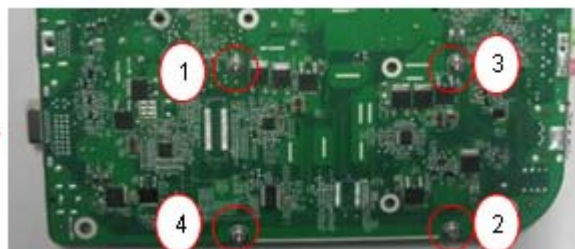
1. Release the four screws.
2. Remove M/B.



Remove HDD

Process:

1. Release four screws.
2. Remove HDD.



Remove memory

Process:

1. Remove Memory from SODIMM.
2. Remove the second Memory from SODIMM2 (Optional by SKU).



Troubleshooting

Please refer to generic troubleshooting guide for troubleshooting information relating to following topics:

- ☐ Power-On Self-Test (POST)
- ☐ POST Check Points
- ☐ POST Error Messages List
- ☐ Error Symptoms List

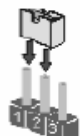
Jumper and Connector Information

Jumper Setting

This section explains how to set jumpers for correct configuration of the mainboard.

Setting Jumper

Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

Description	Illustration
The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.	 SHORT OPEN
This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT	

Clear CMOS

Jumper	Type	Description	Setting(Default)	Illustration
CLR_CMOS	3-pin	CLEAR CMOS	1-2 : Clear 2-3 : Normal Before clearing the CMOS,make sure to turn off the system	Clear CMOS  1

Checking Connector

CPU_FAN: CPU Cooling Fan Connector

	Pin	Signal Name	Function
	1	GND	System Ground
	2	+12V	Power +12V
	3	Sense	Sensor
	4	Control	FAN Control Signal

FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of **Aspire R3600**. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE: Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You **MUST** use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Exploded Diagram

